

— Appl. No. : 10/757,638
Filed : January 13, 2004

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of forming a platinum conductive layer on a semiconductor device, the method comprising;

(i) positioning the semiconductor device within a chemical vapor deposition chamber;

(ii) introducing a platinum precursor gas into the chemical vapor deposition chamber for a first period of time so as to deposit a platinum conductive layer on the device;

(iii) introducing a reactant into the chemical vapor deposition chamber for a second period of time, so that organic waste compounds contacting the platinum conductive layer are removed to thereby facilitate subsequent deposition of the platinum conductive layer; and

(iv) continuing acts (ii) and (iii) until the conductive layer of a desired thickness is achieved;

(v) monitoring the rate of deposition of the platinum layer;

(vi) determining when the rate of deposition has decreased below a desired threshold;

(vii) halting the supply of platinum precursor gas upon determining that the rate of deposition is less than the desired threshold; and

(viii) providing the reactant after halting the supply of the conductive precursor gas.

2. (Original) The method of Claim 1, wherein introducing the platinum precursor gas into the chemical vapor deposition chamber comprises introducing a platinum precursor gas into the chemical vapor deposition chamber wherein the platinum is bonded to a methyl compound so as to improve the step coverage of the platinum precursor gas when forming the conductive layer.

3. (Original) The method of Claim 2, wherein introducing the platinum precursor gas comprises introducing a (methylcyclopentadienyl)(trimethyl) platinum gas into the chemical vapor deposition chamber.

Appl. No. : 10/757,638
Filed : January 13, 2004

4. (Original) The method of Claim 1, wherein introducing the reactant into the chemical vapor deposition chamber comprises introducing the reactant both simultaneously with the platinum precursor gas and sequentially to the platinum precursor gas.

5. (Original) The method of Claim 4, wherein the reactant is a reducing agent.

6. (Original) The method of Claim 4, wherein the reactant is an oxidizing agent.

7. (Original) The method of Claim 4, wherein introducing the reactant comprises introducing a reactant selected from the group comprising N₂O, O₂, NH₃, NO, H₂O and ozone.

8. (Canceled)

9. (Currently amended) The method of Claim 81, wherein monitoring the rate of deposition of the platinum ~~precursor gas~~ layer comprises monitoring the amount of platinum components in the platinum precursor gas that arrives at a waste receptacle following introduction of the platinum precursor gas into the chemical vapor deposition chamber.

10. (Original) The method of Claim 9, wherein monitoring the amount of platinum components in the platinum precursor gas that arrives at a waste receptacle comprises using a mass spectrometer to obtain a measurement indicative of the amount of platinum components of the platinum precursor gas that arrives at the waste receptacle.

Claims 11-20 (Canceled)